Errata

NFPA 54

National Fuel Gas Code

2002 Edition

Reference: Various
Errata No.: 54-02-1

The Committee on National Fuel Gas Code notes the following error in the 2002 edition of NFPA 54, *National Fuel Gas Code.*

1. Revise paragraph 3.3.238 as follows:

3.3.238 Venting System, Mechanical Draft, Forced. A venting system in which a fan or other mechanical device ~~issued~~ is used to cause the flow of flue or vent gases under positive static vent pressure.

2. Revise paragraph.8.3.2 as follows:

8.3.2 Indoor Combustion Air. The required volume of indoor air shall be determined in accordance with the method in 8.3.2.1 or ~~the method in~~ 8.3.2.2 except that where the air infiltration rate is known to be less than 0.40 ACH, the method in 8.3.2.2 shall be used. The total required volume shall be the sum of the required volume calculated for all appliances located within the space. Rooms communicating directly with the space in which the appliances are installed through openings not furnished with doors, and through combustion air openings sized and located in accordance with ~~8.3.2.4~~ 8.3.2.3 are considered a part of the required volume.

3. Revise paragraph 8.3.2.3(2) as follows:

8.3.2.3 (2) Combining spaces in different stories. The volumes of spaces in different stories shall be considered as communicating spaces where such spaces are connected by one or more openings in doors or floors having a total minimum free area of 2 in^2/1000 Btu/hr (~~8,800~~ 4,400 mm^2/kW) of total input rating of all gas utilization equipment.

4. Revise paragraph 8.3.3.1 (2) as follows:

8.3.3.1 (2)* Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of ~~not less than~~ 1 in.2/2000 Btu/hr (1100 mm2/kW) of total input rating of all equipment in the enclosure. [See Figure A.8.3.3.1(2).]

5. *Revise equation in 12.3.2* as follows:*

$$D = \frac{Q^{0.381}}{18.93\left[\frac{\left(P_1^2 - P_2\right)^2 \cdot Y}{Cr \times L}\right]^{0.206}}$$

Correct bracketed part to read:

$$\left(P_1^2 - P_2^2\right)$$

6. Revise paragraph 13.1.3 as follows:

13.1.3 Elbows. Single-appliance venting configurations with zero (0) lateral lengths in Tables 13.1, 13.2, and 13.5 shall not have elbows in the venting system. <u>For vent configurations with lateral lengths, the venting tables include allowance for two 90 degree turns.</u> <u>For each elbow up to and including 45 degrees, the maximum capacity listed in the venting tables shall be reduced by 5 percent.</u> For each elbow greater than 45 degrees up to and including 90-degrees, the maximum capacity listed in the venting tables shall be reduced by 10 percent.

7. In Tables 13.1 thru 13.4, and 13.6 thru 13.9 the columns NAT Max *and* NAT + NAT *should have been shaded.* (Replacement tables are available on request through Codes and Standards Administration)

8. *Revise the heading to Table 13.5 as follows:*

<table>
<tr><td colspan="10">Table 13.5 Single-Wall Metal Pipe or Type B Asbestos Cement Vent</td></tr>
<tr><td colspan="4"></td><td colspan="2">Number of Appliances:</td><td colspan="4">Single</td></tr>
<tr><td colspan="4"></td><td colspan="2">Appliance Type:</td><td colspan="4">Draft Hood-Equipped</td></tr>
<tr><td colspan="4"></td><td colspan="2">Appliance Vent Connection:</td><td colspan="4">Connected Directly to Pipe or Vent</td></tr>
<tr><td rowspan="3">Height
H
(ft)</td><td rowspan="3">Lateral
L
(ft)</td><td colspan="8"><s>Single -Wall Metal Connector</s> Diameter – D (in.)
To be used with chimney areas within the size limits at bottom</td></tr>
<tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>10</td><td>12</td></tr>
<tr><td colspan="8">Appliance Input Rating in Thousands of Btu per Hour</td></tr>
</table>

9. Revise Annex A.8.3.2.2 as follows:

A.8.3.2.2 See Table ~~A.8.3.2.2(a)~~ <u>A.8.3.2.1</u> and Table A.8.3.2.2(b).

10. Revise Annex I.1 (1) (c) as follows:

I.1 (1) (c) Using Table A.8.3.2(a), the required volume for a 140,000 Btu/hr ~~water heater~~ <u>combined input</u> is 7,000 ft 3

11. Revise Annex I.2.1(a) as follows:

I.2.1 (a) Fan-assisted furnace: For structures that the air infiltration rate is known, method 8.3.2.2 permits the use of the equation in 8.3.2.2(2) to determine the required volume for a fan-assisted appliance. Section ~~8.3.2.3~~ <u>8.3.2.2 (3)</u> limits the use of the equation to air change rates equal to or less than 0.60 ACH. While the house was determined to have a 0.65 ACH, 0.60 is used to calculate the required volume. Using the equation in 8.3.2.2(2), the required volume for a 100,000 Btu/hr fan-assisted furnace is calculated as follows:

$$= \frac{15\ \text{ft}^3}{0.65}\left(\frac{100{,}000\ \text{Btu/hr}}{1{,}000\ \text{Btu/hr}}\right)$$

$$= 2{,}308\text{ft}^3$$

Change 0.65 to 0.60

Change 2,308 to 2500

~~Section 8.3.2.2 specifies a lower required volume limitation for fan-assisted appliances at no smaller than 25 ft^3 per 1,000 Btu/hr. From Table A.8.3.2.2(2), the lower limit is~~

~~2,500 ft^3~~

Because the calculated required volume of 2,308 ft^3 falls below the lower required volume limit, the lower limit of 2,500 ft^3 must be used as the minimum required volume.

12. Revise Annex I.2.1 (b) as follows:

I.2.1 (b) Draft-hood equipped water heater:
For structures that the air infiltration rate is known, method 8.3.2.2 permits the use the equation in 8.3.2.2(1)to determine the required volume for a draft hood equipped appliance. Section ~~8.3.2.3~~ 8.3.2.2 (3) limits the use of the equation to air change rates equal to or less than 0.60 ACH. While the house was determined to have a 0.65 ACH, 0.60 is used to calculate the required volume. Using the equation in 8.3.2.2(1), the required volume for the 40,000 Btu/hr water heater is calculated as follows:

$= \frac{21\ \text{ft}^3}{0.65}\left(\frac{40{,}000\ \text{Btu/hr}}{1{,}000\ \text{Btu/hr}}\right)$ $= 1{,}292\ \text{ft}^3$	Change 0.65 to 0.60 Change 1,292 to 1400

~~Section 8.3.2.2 specifies a lower required volume limitation for appliances other than fan-assisted at no smaller than 35 ft^3 per 1,000 Btu/hr. From Table A.8.3.2.2(1), the lower limit is~~

~~1,400 ft^3~~

Because the calculated required volume of 1,292 ft^3 falls below the lower required volume limit, the lower limit of 1,400 ft^3 must be used as the minimum required volume.

13. Revise Annex I.3.1 (a) as follows:

I.3.1 (a) Fan-assisted furnace: For structures that the air infiltration rate is known, method 8.3.2.2 permits the use of the equation in 8.3.2.2(2) to determine the required volume for a fan-assisted appliance. Section 8.3.2.3 limits the use of the equation to air change rates equal to or less than 0.60 ACH. ~~While the house was determined to have a 0.65 ACH, 0.60 is~~ Because 0.30 ACH is less than 0.60 ACH, 0.30 can be used to calculate the required volume. Using the equation in 8.3.2.2(2), the required volume for a 100,000 Btu/hr fan-assisted furnace is calculated as follows:

$$= \frac{15\ \text{ft}^3}{0.30}\left(\frac{100{,}000\ \text{Btu/hr}}{1{,}000\ \text{Btu/hr}}\right)$$

$$= 5{,}000\ \text{ft}^3$$

~~Section 8.3.2.2 specifies a lower required volume limitation for fan-assisted appliances at no smaller than 25 ft^3 per 1,000 Btu/hr. From Table A.8.3.2.2(2), the lower limit is~~

~~2,500 ft^3~~

~~Because the calculated required volume of 5,000 ft^3 is above the lower required volume limit, use this amount as the minimum required volume.~~

14. Revise Annex I.3.1 (b) as follows:

I.3.1 (b) Draft-hood equipped water heater: For structures that the air infiltration rate is known, method 8.3.2.2 permits the use the equation in 8.3.2.2(1)to determine the required volume for a draft hood equipped appliance. Section ~~8.3.2.3~~ 8.3.2.2 (3) limits the use of the equation to air change rates equal to or less than 0.60 ACH. While the house was determined to have a 0.65 ACH, 0.60 is used to calculate the required volume. Using the equation in 8.3.2.2(1), the required volume for the 40,000 Btu/hr water heater is calculated as follows:

$= \frac{21\ \text{ft}^3}{0.65}\left(\frac{40{,}000\ \text{Btu/hr}}{1{,}000\ \text{Btu/hr}}\right)$	Change 0.65 to 0.60
$= 1{,}292\ \text{ft}^3$	Change 1,292 to 1,400

~~Section 8.3.2.2 specifies a lower required volume limitation for appliances other than fan-assisted at no smaller than 35 ft^3 per 1,000 Btu/hr. From Table A.8.3.2.2(1), the lower limit is~~

~~1,400 ft^3~~

~~Because the calculated required volume of 1,292 ft^3 falls below the lower required volume limit, the lower limit of 1,400 ft^3 must be used as the minimum required volume.~~

15. Revise Annex J.1 (2) as follows:

J.1 (2) Determine the total required volume: The standard method to determine combustion air will be used to calculate the required volume.
The combined input for the appliances located in the basement is calculated as follows:

$$100{,}000\ \text{Btu/hr} + 40{,}000\ \text{Btu/hr} = 140{,}000\ \text{Btu/hr}$$

The Standard Method requires that the required volume be determined based on 50 cubic feet per 1000 Btu/hour.
Using Table ~~A.8.3.2.1(a)~~ A.8.3.2.1, the required volume for a 140,000 Btu/hr water heater is
7,000 ft^3

16. In Annex G.2.4 revise paragraph to read as follows:

Solution
According to ~~13.2.18~~ 3.2.20, Type B vent connectors are required to be used with exterior masonry chimneys. Use Table 13.13(a) and Table 13.13(b) to size FAN+NAT common venting installations involving Type-B double wall connectors into exterior masonry chimneys.

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